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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Shih-Jong J. Lee

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EXAMINER

MOTSINGER, SEAN T

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/828,629	Applicant(s) LEE ET AL.	
	Examiner SEAN MOTSINGER	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 19-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 13-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/14/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

Rejections Under 35 U.S.C. 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-18 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 contains the language "pattern map" while other claims for example contain the language "PatternMap" it is not clear if these are two separate features or the same feature. What is the difference between a "pattern map" and a "PatternMap"? The broadest reasonable interpretation of these two claim features is the same since they are essentially the same words. The claim language should be amended to make these elements consistent (i.e. replace "Pattern Map" "pattern map") or different language for "PatternMap" or "pattern map" such that these two elements have different meanings.

Claims 2-18 are unclear because they depend from claim 1

Re claim 2, Claim 2 is unclear because it claims that a the method of claim 1 further comprises a recipe. This does not make sense methods consist of steps or action and a recipe does not appear to be a step or action. It is not clear what the claim requires.

Re claim 16 claim 16 depends from claim 5 which lacks antecedent basis for the claim element the PatternMap integration and update step. The examiner believes applicant may have intended this claim to depend from claim 6.

Rejections Under 35 U.S.C. 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims rejected under 35 U.S.C. 103(a) as being unpatentable over "A curvature based multi-resolution automatic karyotyping system" Garcia , Cristina, et al
Departamento Tecnologia Electronica ETSI telecomunicacion Universidad de Malaga
Published online 3 June 2003 hereinafter referred to as "Garcia" in view of Cabib et al
US 5,912,165 hereinafter referred too as "Cabib".

Re claim 1 Garcia discloses A method for the detection and analysis of patterns comprises the steps of: a) Input an image containing object labels (see figure 3c-d note there is an image with segmented objects); b) Perform relational feature development using the input image to create at least one pattern map output (see figure 10 d);

Cabib discloses c) Perform relational feature analysis using the at least one pattern map to create a relational feature analysis result output (column 38 lines 45 -55 determine if there is a chromosomal aberration). The motivation to combine is to detect

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chromosomal aberrations (column 38 lines 45 -55 determine if there is a chromosomal aberration). Therefore it would have been obvious to combine the classification method of Garcia with the classification method of Cabib to reach the aforementioned advantage.

Re claim 2 Garcia further describes further comprises a recipe for automation control (see sections 3 and 4 this is a recipe for automatic karyotype creation).

Re claim 3 Cabib further discloses The pattern detection and analysis method further includes determination of a genetic anomaly (column 38 lines 45-55)

Re claim 4 Garcia further discloses wherein the relational feature analysis method selects from the set consisting of: a) PatternMap viewing (see figure 9), b) PatternMap operation (note only one of these features is required to meet the claim because they are presented in the alternative).

Re claim 5 Garcia further discloses wherein the relational feature development method further comprises the steps of: a) Perform core measurement table development using the input image (curvature function calculation see section section 3.1) to create at least one core measurement table output (note in figures 5a and 5b there is a curavure assigned to each pixel along the chromosome); b) Perform feature table production (Feature vector section 3.2) using the at least one core measurement

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table to create at least one feature table output (section 3.2 first sentence the curvature function is used); c) Perform PatternMap creation (karyotype creation figure 9b) using the at least one feature table to create a PatternMap output (section 4 hierarchical classification to create).

Re claim 6 Garcia further comprises a PatternMap integration and update step (note each chromosome is classified (i.e. updated) to created the karyotype section 4) to create an updated PatternMap.

Re claim 7 Garcia further discloses The relational feature development method of claim 5 wherein the core measurement table selects from the set consisting of: a) Conditional table, b) Relational table (note the curvature table corresponds to a conditional table because it describes the condition of a chromosome see section 3.1). The examiner notes that this claim is in the alternative so only one of these tables is required to meet the claim as a conditional table is shown the claims further defining a relational table need not be shown to meet the claim.

Re claim 8 Garcia further discloses wherein the conditional table includes measurements from the set consisting of: a) Boundary distance, b) Radial distance (Euclidean distance section 3.1 second column). The examiner notes that this claim is in the alternative so only one of these measurements is required to meet the claim as

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radial distance is shown claims further describing boundary distance need not be shown.

Re claim 10 these claims further define boundary distance. Since only one of a boundary distance and radial distance need be shown these elements need not be shown since a "radial distance" was shown in claim 8

Re claims 9 11 and 12 these claims further define a relational table. Since only one of a relational table and a conditional table need be shown these elements need not be shown since a "conditional table" was shown in claim 7

Re claim 16 Garcia further discloses the relational feature development method wherein the PatternMap integration and update step selects from the set consisting of: a) PatternMap integration rule, b) PatternMap update rule (note each chromosome is classified (i.e. updated) to created the karyotype section 4.

Re claim 17 The relational feature analysis method of claim 4 wherein the PatternMap Viewing selects from the set consisting of: a) Color coded map, b) Bar chart, c) Histogram, d) Image montage (figure 9 b).

Re claim 18 Garcia The pattern detection and analysis method of claim 2 wherein the recipe for automation control is selected from the set consisting of: a)

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Image loading recipe, b) Feature table production recipe, c) PatternMap creation recipe (see sections 3 and 4 this is a recipe for automatic pattern map creation), d) PatternMap update and integration recipe, e) PatternMap operations recipe, f) Output recipe.

Allowable Subject Matter

Claims 13-15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Claim 13 contains allowable subject matter because the prior art of record does not disclose wherein the feature table production further consists of the following steps: a) Select one input relational table; b) Select a feature rule; c) Choose a data treatment; d) Select a class member integration rule. Note this claim language requires that the method “consist” of these steps meaning that it requires steps a-d to be performed and only steps a-d to be performed. Claims 14 and 15 depend from claim 13

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEAN MOTSINGER whose telephone number is (571)270-1237. The examiner can normally be reached on 9-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571)272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bhavesh M Mehta/
Supervisory Patent Examiner, Art Unit 2624

Motsinger
4/11/2009